

Title (en)

AUTOMATED CRYOGENIC STORAGE AND RETRIEVAL SYSTEM

Title (de)

AUTOMATISIERTES KRYOGENES SPEICHERUNGS- UND ABRUFSYSTEM

Title (fr)

SYSTÈME AUTOMATISÉ DE RÉCUPÉRATION ET DE STOCKAGE CRYOGÉNIQUE

Publication

**EP 3768081 A1 20210127 (EN)**

Application

**EP 19715608 A 20190315**

Priority

- US 201862647450 P 20180323
- US 2019022519 W 20190315

Abstract (en)

[origin: US2019293344A1] A cryogenic storage system includes a transfer module configured to service one or more cryogenic storage freezers. The transfer module includes a working chamber that maintains a cryogenic environment for the transfer of sample tubes between different sample boxes. One or more freezer ports enable the transfer module to receive a sample box extracted from a respective freezer. An input/output (I/O) port enables external access to samples. A box transport robot operates to transport sample boxes between the freezer ports, the working chamber, and the I/O port. A picker robot operates to transfer sample tubes between sample boxes within the working chamber.

IPC 8 full level

**A01N 1/02** (2006.01); **B65G 47/90** (2006.01); **F25D 25/04** (2006.01)

CPC (source: EP KR US)

**A01N 1/0236** (2013.01 - EP KR US); **A01N 1/0257** (2013.01 - EP US); **B25J 5/02** (2013.01 - KR); **B25J 15/08** (2013.01 - KR); **B65G 47/901** (2013.01 - EP KR US); **F25D 25/04** (2013.01 - EP KR US); **F25D 29/001** (2013.01 - US); **G01N 1/42** (2013.01 - US); **G01N 35/0099** (2013.01 - US); **G01N 35/026** (2013.01 - US); **B65G 1/0421** (2013.01 - US); **B65G 1/0464** (2013.01 - US); **B65G 1/0485** (2013.01 - US); **B65G 1/137** (2013.01 - US); **G01N 2001/1081** (2013.01 - US); **G01N 2035/00435** (2013.01 - US)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**US 11828516 B2 20231128**; **US 2019293344 A1 20190926**; CN 112566497 A 20210326; EP 3768081 A1 20210127; EP 3768081 B1 20240724; JP 2021519247 A 20210810; JP 7321182 B2 20230804; KR 20200135462 A 20201202; SG 11202009243S A 20201029; US 2024044576 A1 20240208; WO 2019182900 A1 20190926

DOCDB simple family (application)

**US 201916354993 A 20190315**; CN 201980032264 A 20190315; EP 19715608 A 20190315; JP 2020551347 A 20190315; KR 20207030305 A 20190315; SG 11202009243S A 20190315; US 2019022519 W 20190315; US 202318491220 A 20231020